BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE POLICY DIRECTIVE 61-1

31 AUGUST 1993

Scientific Research and Development

MANAGEMENT OF SCIENCE AND TECHNOLOGY

OPR: SAF/AQT
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1. One key to the success of Air Force missions is the ability to transform science and technology into warfighting capability. Because this diverse process often requires long-term planning and involves high risks, the Air Force uses specialized management to achieve its scientific and technological goals. This directive establishes policies for managing and executing the Air Force Science and Technology (S&T) program.

2. To maintain a superior warfighting force beyond the 21st century, the Air Force will aggressively develop and demonstrate advanced technologies.

3. The Air Force will manage S&T as an integrated set of programs which will be considered a "corporate," or unified, investment for the future. The S&T program includes basic research, exploratory development, and advanced-technology development to produce generic, not system-specific, technologies. Neither a validated requirement nor programmed funding for formal acquisition is necessary to begin an S&T effort.

4. The Air Force will structure the S&T program so it responds to a broad range of future Air Force needs, from near-term upgrades to far-term warfighting.

4.1. The Air Force will pursue S&T efforts in Air Force laboratories and contractual S&T programs with universities and industry. This balanced approach will maintain and provide strong research abilities in areas critical to the Air Force's military missions, expertise in technologies relevant to the Air Force, and technical support to fielded systems.

4.2. The Air Force will plan and execute S&T programs along with other services and Department of Defense (DoD) agencies. In addition, the Air Force will aggressively leverage national or international programs in technology development and will actively investigate opportunities for dual use and defense conversion.

4.3. Criteria to consider in developing and demonstrating advanced technologies that meet user needs will include performance, affordability, sustainability, environmental quality, reliability, and maintainability.

5. The Air Force will ensure that funds provided for any S&T program element will be used only for S&T efforts consistent with the approved Congressional Descriptive Summary and subsequent formal reprogrammings.

6. This directive establishes the following responsibilities and authorities:

6.1. The Secretary of the Air Force, together with the Chief of Staff of the Air Force, determines a yearly funding threshold for S&T.

6.2. The Assistant Secretary of the Air Force (Acquisition), or designated representative, annually develops broad policy guidance on S&T and approves the technology area plan for the Technology Executive Officer (TEO), HQ AFMC/ST. The Assistant Secretary of the Air Force (Acquisition), or a designee, represents the Air Force's S&T program in the activities of the Defense Technology Board.

6.3. The Director of Science and Technology (SAF/AQT) establishes broad policy and guidance for the S&T program, directs advanced-technology development, and oversees the Air Force's S&T staff. SAF/AQT allocates the S&T funding threshold within the S&T program elements, prepares and submits the biennial justification for the Congress, adjusts funding as required, and approves reprogramming actions. SAF/AQT also advocates and defends the S&T program within the Secretariat, Headquarters US Air Force, Office of the Secretary of Defense (OSD), and the Congress, and provides broad guidance and direction on executing programs.

6.4. The TEO is responsible for the development and implementation of Air Force S&T program plans and management processes, and reports to SAF/AQ. The TEO develops technology area plans that address Air Force technology needs and opportunities and submits these plans through SAF/AQT to SAF/AQ for approval. The TEO advises SAF/AQT on budget allocation. By the first of each calendar year, the TEO also submits (RCS: SAF-AQT (A) 9314), *Status of Air Force Science and Technology*, to SAF/AQT.

6.5. Directors and commanders of Air Force laboratories manage and carry out specific efforts in S&T. They allocate resources between in-house and contracted activities, and maintain in-house centers of excellence in technology areas critical to the Air Force--with special emphasis on areas not adequately addressed by other organizations. The laboratory directors and commanders report to the TEO concerning the plans and management processes of the S&T program.

6.6. To conduct the Air Force's S&T program, Headquarters Air Force Materiel Command (AFMC) provides facilities, equipment, and trained personnel at the AFMC headquarters, Air Force Office of Scientific Research, and the Air Force laboratories.

6.7. The operational commands review advanced technology transition demonstrations and provide feedback to HQ AFMC/ST.

7. Terms Explained:

7.1. **Advanced Technology Development** demonstrates performance improvements, increased sustainment abilities, or cost reduction potential of militarily relevant technologies.

7.2. **Basic Research** is the scientific study and experimentation directed toward increasing knowledge and understanding in the fields of physical, engineering, environmental, and life sciences.

7.3. **Exploratory Development** translates promising basic research into solutions for broadly defined military needs, short of major development projects.

7.4. **In-House Activities** are research and development in science and engineering done within Air Force laboratories rather than by contract.

8. This policy directive implements the national S&T policy, applicable portions of DoD Directive 5000.1, *Defense Acquisition*, February 23, 1991; and DoD Directive 5134.5, *Defense Technology Board (DTB)*, October 28, 1992.

9. Related documents include AFI 61-104, *Program Management Directives for Science and Technology* (no former publication); and AFI 61-105, *Acquisition Planning for Science and Technology* (formerly AFR 83-1).

10. See **Attachment 1** for measures of compliance with this policy.

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for Acquisition

Attachment 1

MEASURING COMPLIANCE WITH POLICY

A1.1. The graph in **Figure A1.1.** displays cumulative percentages of the respective execution year's S&T funds that have been obligated or expended as compared to the OSD goal. This financial measure will be tracked monthly for S&T as a whole and for each program element in S&T. **Figure A1.2.** displays trends for obligations and expenditures over the last 3 years. The graph on obligations and expenditures measures effectiveness of the overall financial and contracting execution of the S&T program and is a key indicator of management and execution effectiveness.

A1.2. The graph in **Figure A1.3.** measures the quality and relevance of the S&T program. This graph will be from the annual report RCS: SAF-AQT (A) 9314, *Status of Air Force Science and Technology*. MAJCOMs and AFMC's Technical Planning Integrated Product Teams evaluate and rank each S&T thrust for relevance using a scale of 6 through 10, with 10 being the highest ranking. Independent technical experts will use the same scale to rank for quality. The radial distance of the quality or relevance point from the 10/10 point provides the overall measure for each thrust. The average for all thrusts will also be displayed. Yearly movement of the average points provide trend data.

Figure A1.1. Sample Metric of FY92 S&T Obligation and Expenditure Data.

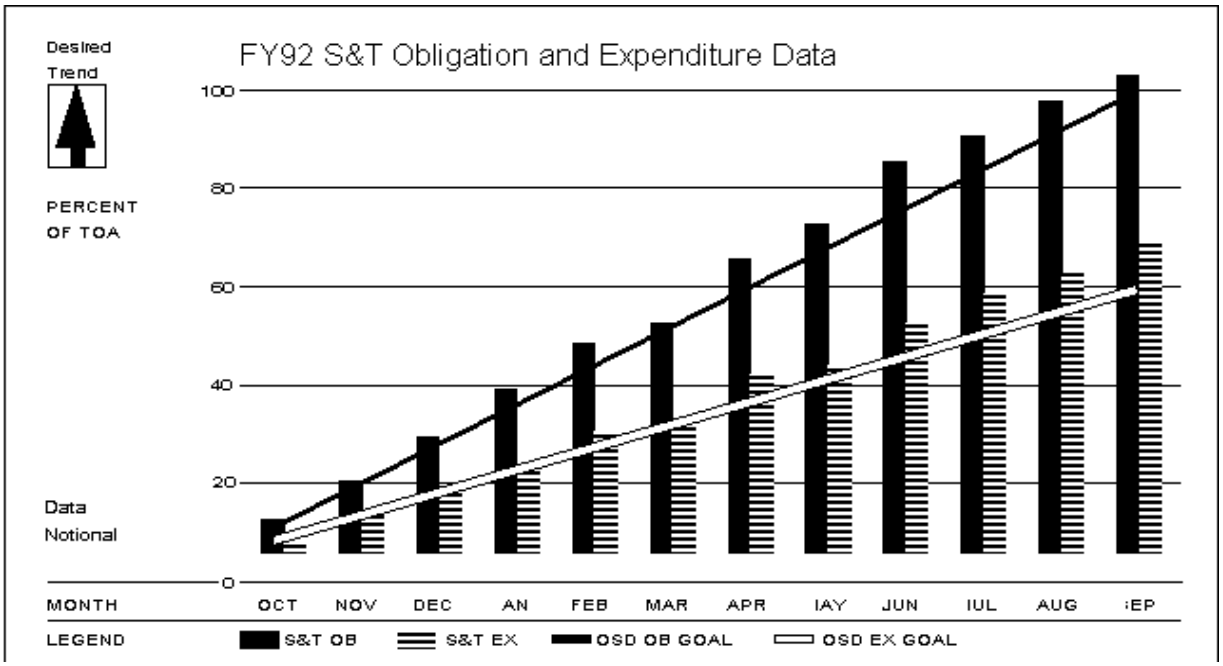

Figure A1.2. Sample Metric of FY90-92 Obligation and Expenditure Data.

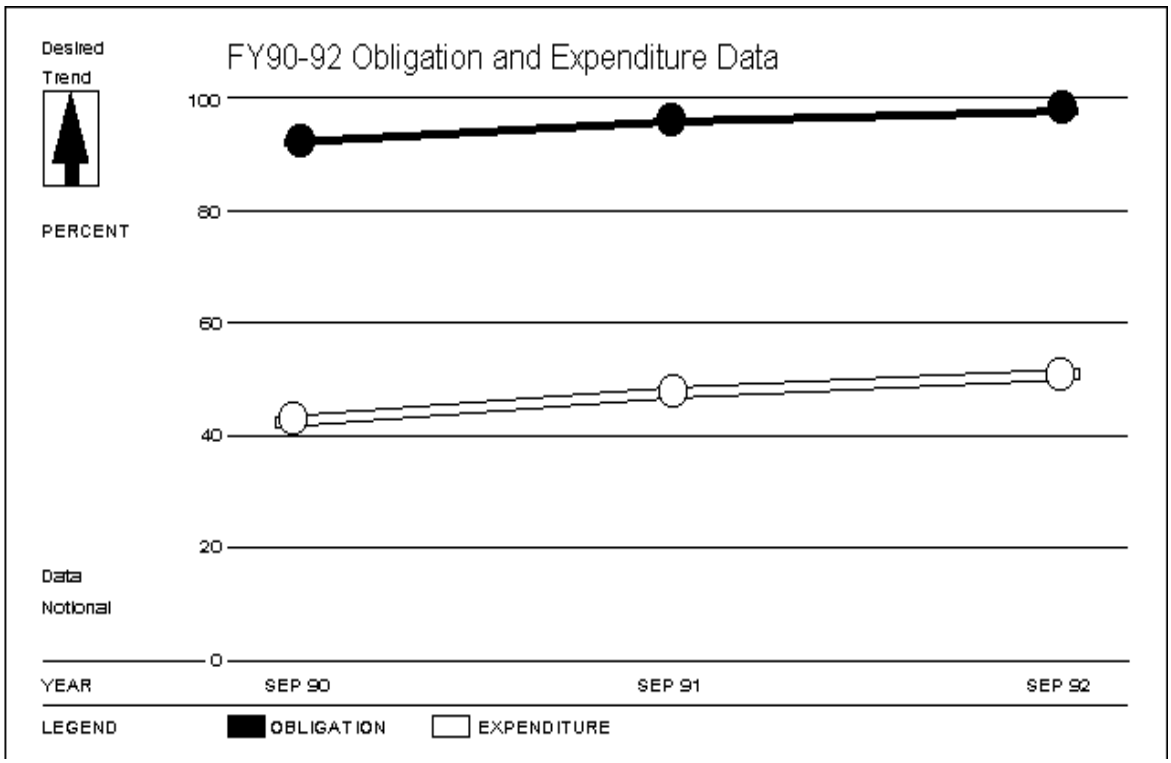

Figure A1.3. Sample Metric of Quality and Relevance of the S&T Program.